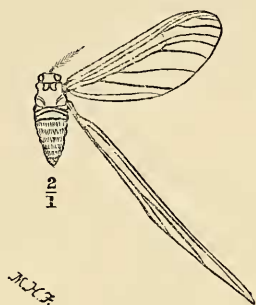


very similar to that of the allied genera, the abdomen, however, is closely but coarsely scaled.



Semioptila torta, sp. n.

Wings transparent, sparsely scaled, the basal half with rust-reddish or reddish-orange scales, the outer or terminal half with brown scales; secondaries with an oval orange spot beyond the cell; body pitchy brown, the abdomen with cupreous-brown scales; vertex of head and collar orange: under surface pale brown, with a few orange hairs on the pectus. Expanse of wings 24 millim.

Congo (coll. P. Crowley).

XX.—Bryozoa from New South Wales, North Australia, &c.

By ARTHUR WM. WATERS.

[Plates V. & VI.]

PART II.

25. *Membranipora nitens*, Hincks.

Membranipora nitens, Hincks, Ann. & Mag. Nat. Hist. ser. 5, vol. vi. p. 85, pl. xi. fig. 4.

Membranipora porcellana, MacGillivray, Trans. Roy. Soc. Vict. 1884, vol. xxi. p. 110, pl. ii. fig. 3.

Bathypora porcellana, MacG., Zool. Vict. dec. xi. p. 26, pl. 106. fig. 8.

Loc. Portland and Port Phillip (Victoria); Shoalhaven Beach (N. S. Wales).

26. *Membranipora Savartii* (Aud.).

For synonyms see Waters, Quart. Journ. Geol. Soc. vol. xli. p. 286, and *Membranipora deliculata*, Hincks, Ann. & Mag. Nat. Hist. ser. 5, vol. vi. p. 86, pl. xi. fig. 1.

Membranipora reticulum, Pergens, Plioc. Bry. von Rhodos, Ann. k.-k. Hofmuseums, Wien, Bd. ii. p. 14.

A specimen from Palm Island has the zoarium in the *Vincularia*-form, sometimes anastomosing, and, as I have pointed out in a previous communication, it has "denticles" in all the zoecia. Part of the colony has the zoecia surrounding the stem of a seaweed, and in other parts the stem is solid without any support. This is, as already shown, the *Biflustra delicatula* of Busk and MacGillivray.

There is also a small fragment from Darnley Island, Torres Straits, with a single row of zoecia on each of the four sides; the shape of the cells is similar to the above but not identical, being more elongate, straighter, and somewhat larger, with similar "denticles." It may be the *Vincularia quadrilatera* of d'Orb. (Pal. Fr. p. 189, pl. 681. figs. 1-3), though from so small a fragment it is impossible to speak with certainty, so in the meantime I call it *M. Savartii*, var. *quadrilatera*, d'Orb. (Pl. IV. fig. 8).

Loc. Cretaceous, France; Miocene, Austria; Pliocene, England, Italy, Sicily. Living: Florida, 29 fath.; Victoria; Queensland; Philippine Islands; Penang, &c.; Palm Island, N.E. Australia, 8-10 fath.

27. *Membranipora corbula*, Hincks.

Membranipora corbula, Hincks, Ann. & Mag. Nat. Hist. ser. 5, vol. vi. p. 378, pl. xvii. fig. 6; MacGillivray, Zool. Vict. dec. xiii. p. 103, pl. 127. fig. 2.

In a specimen from Shark Island the number of spines is somewhat variable, there being sometimes two large spines and three smaller oral ones.

Loc. Victoria; Shark Island, 8 fath., Sow-and-Pigs Reef, Port Jackson, 3-4 fath., and Bottle-and-Glass Rocks, 8 fath., N. S. Wales.

28. *Membranipora spinosa* (Q. & G.).

Membranipora spinosa, Waters, Quart. Journ. Geol. Soc. vol. xliii. p. 48, pl. viii. fig. 32, for synonyms, and add MacGillivray, Zool. Vict. dec. xiii. p. 107, pl. 127. fig. 8.

In specimens from Vacluse Point there is in the interior what we may call a strengthening plate, at each side towards the distal end, starting from the base of the zoecium, and attached also to the border of the opesia. This I figured in the fossil from Napier, where it is well marked and forms a chamber on each side.

The basal wall is only membranous, but in many cases there is an oval space of thicker membrane or chitin.

MacGillivray calls the spines rigid, and although this is a

correct description yet when they are calcined there is found to be an organic circle at the base; the spines nevertheless hold together, showing that this surrounds calcareous matter.

The rosette-plates are small and numerous, forming a line along the middle of the wall.

Loc. Living: Victoria; Kerguelen Island; S. Patagonia; New Zealand; Holborn Island; Vacluse Point, Port Jackson, 5 fath. Fossil: Aldinga; Australia; and Napier, New Zealand.

29. *Membranipora roborata*, Hincks.

Membranipora roborata, Hincks, Ann. & Mag. Nat. Hist. ser. 5, vol. viii. p. 69, pl. ii. fig. 3; Waters, Quart. Journ. Geol. Soc. vol. xxxix. p. 433.

Flustra membraniporides, Busk, Challenger Report, p. 54, pl. xxxii. fig. 7 (unilaminate).

Craspedozoum ligulatum, MacGillivray, Descriptions of New or Little-known Polyzoa, pt. ix. p. 5, pl. i. fig. 3.

Craspedozoum spicatum, MacG. *ibid.* p. 5, pl. i. fig. 2.

Bilaminate specimens from Port Jackson have usually two avicularia, but sometimes only one, and the spines are small and not always found, but there are two on the outer corner of the outside zoecia. This is broader than the unilaminate form from New Zealand, which has usually only one avicularium to a zoecium. The ovicells in both are similar in character, though those from New Zealand have a rounded border. Busk does not mention the tubular fibres at the side of the zoarium. As I have pointed out, in the unilaminate form from New Zealand there are at the commencement of a new branch frequently chitinous tubes from cell to cell, so that they may be considered articulated. In the bilaminate specimens from Port Jackson there are sometimes chitinous tubes on the front passing from one zoecium to another, sometimes to the next, at other times passing over several, and near the place where fresh branches are given off lateral tubes often start from central zoecia.

Loc. Curtis Island; Port Jackson, 8 fath. (bilaminate) (*Braz.*); New Zealand; Port Phillip Heads; Bass's Strait. Fossil: Waurin Ponds (unilaminate).

30. *Membranipora Flemingii*, var. *minax*, B.

Membranipora minax, Busk, Quart. Journ. Microsc. Science, vol. viii. p. 125, pl. xxv. fig. 1; Hincks, Brit. Mar. Polyzoa, p. 169, pl. xxii. fig. 2.

Membranipora Flemingii, forma *minax*, Smitt, Krit. Fört. ö. Skand. Hafs-Bryozoeer, Öfv. K. Vetensk.-Ak. Förh. 1867, pp. 368, 409, pl. xx. fig. 43.

A specimen from the Sow-and-Pigs Reef, Port Jackson,

has the zoecia subhexagonal, surrounded by a raised ridge, the acute avicularia are placed transversely at the base of the zoecium; the ovicell has a raised line enclosing an area, as in *M. Flemingii*, and there do not seem to be any spines; but in spite of this slight difference from the European species it seems that it should be placed here. It is allied to both *M. Flemingii* and *M. umbonata*, B., but is a larger form than either, the zoecia being about 0·5 millim. wide and the opesia 0·3 millim.

Loc. Of typical *minax*. Shetland; Greenland; Finmark; Bergen; Capri (*A. W. W.*). Fossil: from the Pliocene of Pruma, Calabria (*A. W. W.*).

31. *Membranipora tripunctata*, Waters.
(Pl. V. figs. 12, 18, 19, 20.)

Membranipora tripunctata, Waters, Quart. Journ. Geol. Soc. vol. xxxviii. p. 262, pl. ix. fig. 35.

Zoarium cylindrical, about 1 millim. in diameter, articulated by means of numerous chitinous tubes given off from the front of the zoecia near the articulation. The zoecia have a prominent border, and usually an oval opesial opening in the middle of a calcareous lamina, in other cases nearly the whole of the front of the zoecium is open.

Except in the ovicelliferous cells there is a wide depressed area above each zoecium, and above this, or above the ovicell, are two narrow avicularia directed diagonally downwards. Specimens from Holborn Island, which are the best preserved, have a fornix on each side (attached to the middle of the side of the zoecium), widening towards the end, and nearly meeting over the aperture; above these on each side is a club-shaped spine. There are also large raised triangular vicarious avicularia. The ovicell is smooth and considerably raised, with a circular border below the avicularia. Two rosette-plates near the base of the lateral wall.

The zoecial characters are truly Membraniporidan and the fornices and spines may be compared with those of *M. cornigera*.

If it is not called *Membranipora* then it would be *Foricula*, d'Orb., and part of *Foveolaria*, Busk (Chall. Rep.), would also have to be brought under the same genus; for although that is defined as having one avicularium yet there are so many instances in which *Membranipora* have one or two avicularia in different parts of the same specimen that this cannot, in numerous cases, be considered of any specific value.

This and *Foricula aspera*, d'Orb. (Pal. Franç. p. 659, pl. 742. figs. 1-5), from the Cretaceous are allied.

When I gave the specific name I had overlooked the fact

that Hagenow (Bronn's Jahrb. 1839, p. 269, pl. iv. fig. 7) had called a fossil *Cellepora tripunctata*. From the figure and description it, however, seems like *M. Lacroixii*, Aud.

Loc. Fossil: Mt. Gambier. Living: N.E. Australia, 23 fath. (*Br.*); Holborn Island; Broughton Island (N. S. W.) (*Miss Jelly coll.*).

32. *Diploporella cincta* (Hutton).

Membranipora cincta, Hutton, Trans. Roy. Soc. Tasmania, 1877, p. 23.

Diploporella cincta, MacG. Trans. Roy. Soc. Vict. vol. xvii. p. 1, fig. 1 (April 1880).

Diploporella cincta, MacG. *ibid.* vol. xxi. p. 98.

Membranipora transversa, Hincks, Ann. & Mag. Nat. Hist. ser. 5, vol. vi. p. 89, pl. xi. fig. 9 (July 1880); ser. 5, vol. vii. p. 154.

I adopt the genus *Diploporella* merely for convenience, as I am not sure whether it should be retained, and there seems to my mind too great a tendency to divide up the Steganoporellidæ, instead of making *Micropora* more comprehensive; but a more critical study may alter my opinion.

Loc. Queenscliff and Portland, Victoria; Bondi Bay, N. S. Wales.

33. *Micropora perforata* (MacG.).

Membranipora perforata, MacGillivray, Trans. Phil. Inst. Vict. 1859; Zool. of Victoria, dec. iii. p. 29, pl. xxv. fig. 2.

Micropora perforata, Waters, Quart. Journ. Geol. Soc. vol. xli. p. 290.

Membranipora stenostoma, Busk, Cat. Mar. Polyzoa, p. 60, pl. c. fig. 1.

Sow-and-Pigs Reef, Port Jackson.

34. *Micropora ratoniensis*, sp. nov. (Pl. IV. fig. 5.)

Zoarium small, articulated, with a longitudinal row of zoecia on each of the four sides. Zoecia arranged diagonally, with a minute triangular avicularium by the side of each. A pore on one side below the aperture.

This from its size and general appearance would be placed with *Setosella*, but *Setosella* is described as with vibracula; however, Mr. Hincks (Ann. & Mag. Nat. Hist. ser. 5, vol. vii. p. 155) at first considered *Vincularia abyssicola*, Sm., to belong to *Setosella*; but surely the organs there are avicularian, and the mandibles have wings like those of *Membranipora angulosa*, Rss., &c. *Setosella Folini*, Jullien (Bull. Soc. Zool. t. vii. 1882, p. 27, pl. xvii. figs. 63-65), is a uniserial free *Setosella*, but is not described as articulated, though, if described from a small fragment, this might not be seen. These two species indicate that the genus *Setosella* will have to be given up.

Cellularia diploididymoides, Meun. & Pergens (Bry. du Syst. Montien, p. 3) is also apparently somewhat allied.

Loc. Off Raton, New Guinea, 7 fath.

35. *Thalamoporella Rozieri* (Aud.).

Flustra Rozieri, Aud. Descr. de l'Egypte, pl. viii. fig. 9.

Membranipora Rozieri, Busk, Brit. Mus. Cat. p. 59, pl. lxxv. fig. 6.

Steganoporella Rozieri, Hincks, Ann. & Mag. Nat. Hist. ser. 5, vol. vi. p. 379, pl. xvi.; Waters, Quart. Journ. Geol. Soc. vol. xxxviii. p. 505.

Eschara ignobilis, Reuss, "Foram. Anth. & Bry. des Septarienthones," Denkschr. Ak. Wissensch. Wien, xxv. p. 181 (65), pl. vi. fig. 14.

Vincularia novæ-hollandiæ, Haswell, "Polyzoa from the Queensland Coast," Proc. Linn. Soc. N. S. Wales, vol. v. pt. i. p. 41, pl. iii. fig. 3.

The zoarium of the Darnley-Island species is always tubular, or, as we may call it, in the *Vincularia*-form. It has neither avicularia nor ovicells, and the "marginal tuberosities" are only occasionally found. The oral aperture is rounded below.

This is undoubtedly the *V. novæ-hollandiæ* of Haswell, but does not seem to be the *Vincularia gothica*, Busk (Challenger Rep. p. 72), which he, however, unites with *novæ-hollandiæ* and with *Vincularia steganoporoides*, Goldstein. This last is larger than the Darnley-Island specimen, and it seems open to doubt whether it should be placed here or with *gothica*.

I still feel doubtful about the *Steganoporellidæ*, but it seems right to follow Mr. Hincks as long as I have not made an exhaustive study of these families; but in attempting to bring this and the family *Microporidæ* into order we get very elaborate descriptions of the division of the zoecium into various chambers. In many cases it seems that it would be simpler to say that the anterior portion is prolonged by a tubular extension; in fact, the chamber for the polypide is flask-shaped, and the end is closed by an operculum. In most cases the operculum is partly attached to the integument which covers the front, but it is usually also attached to the calcareous wall by a small ridge at the side.

Taking fig. *a* as a type, and slightly altering the form of the aperture, making the neck narrower or wider, and placing the pores in different positions in the space formed between the neck and the lateral walls, we shall find that we have a large series of *Microporidæ* and *Steganoporellidæ*, and my present opinion is that many things that have been removed from the *Microporidæ* will have to be brought back there again.

Loc. Living: in different varieties from

Fig. *a*.



India, California, Australia; Holborn Island, Queensland (H.); Darnley Island, Torres Straits, 10–30 fath. (Br.). Fossil: Miocene of Europe; Bairnsdale, Australia.

36. *Cribrilina monoceros*, Busk, non Reuss.
(Pl. VI. fig. 7.)

The mandible has the lucida very low down, and this position sometimes obtains in *Retepora* and *Flustra*, but it is usually more central. There are two lateral processes as in *Adeonella*, *Membranipora*, &c. The operculum is fleshy and granulate. The chitinous parts of *C. acanthoceros* are very similar.

Loc. Living: S. America; various localities in Victoria; 'Challenger' Station 303, 1325 fath.; Station 235; N. Pacific, 3125 fath.; Station 315, 12 fath.; N. side of Watson's Bay, Port Jackson, "under stones." Fossil: Bairnsdale (Victoria) in *Eschara*-form; Napier, adnate, and Petane (N. Zealand).

37. *Cribrilina tubulifera*, Hincks.
(Pl. V. figs. 2, 6.)

Cribrilina tubulifera, Hincks, Ann. & Mag. Nat. Hist. ser. 5, vol. viii. p. 56, pl. i. fig. 7 (1881); Waters, Quart. Journ. Geol. Soc. vol. xxxix. p. 436.

The specimen from Ball's Head has two rows of erect tubular processes instead of a single one, as described by Hincks, and in this respect resembles the *C. suggerens*, which I described fossil from Curdies Creek about the same time as Mr. Hincks published his species. The aperture of *C. suggerens* is only 0.06 millim. wide, whereas this is 0.14 millim., being larger than the fossil from Muddy Creek, which is only 0.1 millim. wide. The zoecia of my *C. suggerens* and this specimen of *tubulifera* are the same size.

Loc. Bass's Straits (H.); Ball's Head, Port Jackson, 12 fath. Fossil: Muddy Creek, Victoria; and var. *suggerens* from Curdies Creek.

38. *Cribrilina clithridiata*, sp. nov.
(Pl. V. fig. 1; Pl. VI. fig. 2.)

Zoarium incrusting. Zoecia elongate, ovate, distinct, convex, about half of the front occupied by an oval area divided by radiating lines into six sections, with an elliptical opening at the peripheral end of each, the furrows not punctured. Oral aperture clithridiate, the distal edge rounded and the proximal triangular, with a very considerable contraction on each side about the middle of the aperture, and about this

position the operculum often has little wings. Operculum 0.11 millim. wide. There is one large vicarious avicularium with a spatulate mandible resembling that of *C. philomela*, Busk (Chall. Rep. pl. xxii. fig. 7).

The shape of the aperture is quite unusual in the genus *Cribrilina*, but all the other characters are Cribrilinidan, and some fossils as figured by Reuss seem to have a similar aperture. This is perhaps related to *C. speciosa*, Hincks, and according to Jullien (Bull. Soc. Zool. de France, vol. xi. p. 606) would be *Decurtaria*.

Loc. Sow-and-Pigs Reef, Port Jackson, 3-4 fath. (*Brazier*).

39. *Microporella violacea*, Johnst.

One of two specimens from Bondi Bay is violet, the other white, but this may be bleached. So far as I am aware it has not been described as living near Australia, except by Dr. Pergens, who writes that it was brought by a ship's captain from Australia.

Loc. Living: Europe; Florida; Madeira; Red Sea; Bondi Bay (N. S. Wales). Fossil: Miocene of Söllingen; Pliocene of England, Belgium, Italy, and Rhodes; Australia.

40. *Microporella ciliata*, Pallas.

A specimen from the Sow-and-Pigs Reef has the pore semilunate and an avicularium placed rather high on each side. In having an avicularium on each side, and also in its general form, it resembles *M. ciliata*, var. *californica*, but that form has a round pore filled in with a cribriform plate.

Loc. Sow-and-Pigs Reef, Port Jackson, 3-4 fath.

41. *Microporella decorata*, var. *lata*, MacG. (Pl. VI. figs. 1, 6.)

Lepralia lunata, MacG. Zool. Vict. dec. iv. p. 27, pl. xxxvi. fig. 8.

Microporella diadema, var. *lata*, MacG. Trans. Roy. Soc. Vict. vol. xxi. p. 112, pl. iv. fig. 5.

The avicularian mandibles are without any lucida, but there is a characteristic cross bar near the base.

Loc. Queenscliff, Victoria (*MacG.*); Port Phillip (*W.*); Ball's Head, 12 fath., and Watson's Bay, Port Jackson.

42. *Microporella Malusii*, Aud.

Loc. Living: Europe; Australia; New Zealand; and South America; Bottle-and-Glass Rock, 8 fath.; Sow-and-Pigs Reef, 3-4 fath.; Green Point, Port Jackson, 8 fath., sandy

mud bottom. Fossil: European Pliocene; Australia; New Zealand.

43. *Microporella tetrastoma*, Rss., var.

Type *Eschara tetrastoma*, Rss. Sitz. Ak. Wien, 1864, vol. 1. p. 9, pl. ii. fig. 9.

There is a small fragment of a *Microporella* from Darnley Island, of which the zoarium has consisted of thin flattened foliaceous branches. The pyriform zoecia have two or sometimes three pores below the oral aperture, and below these a raised boss or umbo.

It does not seem advisable to name so small a fragment, since this group shows great variation in the zoecia. I have recent *M. tetrastoma* from Port Phillip, with a broad foliaceous growth, in which the outer cells have merely an elongate denticulated pore, whereas the central ones have numerous denticulated pores; on each side of the suboral pore there is a small avicularium directed diagonally upwards; usually the aperture, pore, and avicularia are placed in a deep pit, but this is not always the case, and the central zoecia are usually larger and more raised.

Microporella tetrastoma is no doubt the *M. clavata* from Curdies Creek (Quart. Journ. Geol. Soc. vol. xxxvii. p. 332), and the *Adeonellopsis parvipuncta*, MacG.

Loc. Darnley Island, Torres Straits, 10-30 fath.

44. *Porina larvalis*, MacG. (Pl. VI. fig. 8.)

Lepralia larvalis, MacGillivray, Nat. Hist. of Vict. dec. iv. p. 30, pl. xxxvii. fig. 5.

Porina larvalis, Waters, Quart. Journ. Geol. Soc. vol. xxxviii. p. 269, pl. viii. fig. 19; MacGillivray, Cat. Mar. Polyzoa of Victoria, p. 27.

As I have already pointed out, the question of the generic position is a difficult one; but as the two large pores open into the throat of the peristome and not below the oral aperture, I placed it with *Porina*, and in this it seems that Mr. MacGillivray agrees.

The mandible is simple with a plain lower edge without articular processes, but there are two characteristic diagonal muscular ridges immediately below the lucida.

Loc. Fossil: (with cylindrical zoarium) Bairnsdale. Recent: Victoria; West Australia; Bondi Bay, N. S. W.

45. *Porina coronata*, Rss. (Pl. VI. fig. 5.)

For synonyms see Waters, Quart. Journ. Geol. Soc. vol. xli. p. 297.

This was described as *coronata* by Reuss, and as *gracilis* by Lamouroux and others, but most of the descriptions were

so unsatisfactory that the species intended was left somewhat doubtful; but as Milne-Edwards described it in more detail it is perhaps a question whether we ought not to call it *gracilis*, Lamx. & Edw.

As I have already pointed out, the opercula of species growing in the *b* or *vertebralis*-form, although slightly smaller, correspond with those from typical "*Eschara gracilis*" growing in a foliaceous manner.

Loc. Fossil: France (Cretaceous); Miocene of Europe; Australia; New Zealand, various localities. Living: in *b*-form, Holborn Island, 20 fath.; Darnley Island, Torres Straits, 10-30 fath.; Cape Grenville, N.E. Australia, 20 fath.

46. *Porina inversa*, sp. nov.
(Pl. IV. fig. 23; Pl. V. fig. 5.)

Zoarium incrusting. Zoëcia indistinct, surface flat with large pores; a perforated protuberance, probably avicularium, at each side of the aperture; a round suboral pore. The oral aperture is straight on the distal edge and rounded on the proximal, with the operculum divided radially by irregular bars of thicker chitin, and an irregular ridge near the distal edge. It will be seen that the shape of the oral aperture, which is directed more or less towards the distal part of the zoarium, is the reverse of the usual shape of *Porina*, and, in fact, of the Bryozoa generally, so that, being peculiar in this respect, it is a question whether a new genus should not be made for it.

The zoëcial characters seem much the same as those of *Myriozoum marionensis*, Busk (Chall. Rep. p. 171, pl. xxiii. fig. 6), and there are two figures (pl. cx. figs. 2, 3) in Busk (Brit. Mar. Polyzoa) which seem to be without any description, and may be allied to the present.

Loc. Sow-and-Pigs Reef, 3-4 fath., and Port Jackson, 10 fath.

47. *Tubucellaria opuntioides*, Pall.
(Pl. V. fig. 10.)

Cellaria opuntioides, Pergens, Plioc. Bry. von Rhodos, p. 12.

Tubucellaria cereoides, MacG. Zool. Vict. dec. xi. p. 18, pl. 105. fig. 2.

There are small fragments from Bondi Bay and Adelaide which have the peristome very much prolonged and then curved inwards. This occurs in the Mediterranean *T. opuntioides* (*cereoides*) and in *T. hirsuta*, and in this last the position of the spines remains constant in relation to the pores and not to the aperture. The prolonged peristome was figured

by Busk for *Onchopora hirsuta* (Quart. Journ. Microsc. Sci. vol. iii. pl. iii. fig. 5), but may occur in all parts of a colony, and is by no means confined to the neighbourhood of a joint.

The specimens from Bondi Bay, Adelaide, and Darnley Island are all more delicate than those from Naples, but the sculpturing is the same, and, so far as these small fragments enable me to form an opinion, I do not see any reason for separating them. Both Prof. MacGillivray's figure from Port Phillip Heads, and a specimen sent to me as *Onchopora tubulosa*, Busk, from Tasmania, agree with those from Naples; the same seems to be the case with the *Tubucellaria opuntiooides* of the 'Challenger' Report, from St. Paul's Rocks, N. Atlantic; and I do not understand why Mr. Busk separates this from the Mediterranean form.

Loc. Fossil: Eocene; Miocene; Pliocene of Europe, various localities. Living: Mediterranean; Madeira; Tasmania; N. Atlantic; Victoria; Adelaide; Bondi Bay, N. S. W.; Darnley Island, Torres Straits, 10-30 fath.

48. *Schizoporella marsupifera*, Busk.

Schizoporella marsupifera, Busk, 'Challenger' Report on the Polyzoa, pt. xxx. p. 165, pl. xxii. fig. 14; Waters, Quart. Journ. Geol. Soc. vol. xliii. p. 65; Hincks, Ann. & Mag. Nat. Hist. ser. 5, vol. xix. p. 315.

Schizoporella lineolifera, Hincks, Ann. & Mag. Nat. Hist. ser. 5, vol. xvii. p. 267, pl. ix. fig. 10.

The Port Jackson specimen is without any ovicells, and no spines are apparent. The surface-pores, which are numerous, are elongate, with the longer axis usually pointing towards the oral aperture. Mr. Hincks speaks of the pores being stellate, which is not the case in the Australian specimen, and Mr. Busk calls the surface granular, so that it seems to be subject to considerable variation. Operculum granular.

Loc. Fossil: Waipukurau (N. Zealand). Living: Marion Island, 50-75 fath.; New Zealand; Adriatic; Bottle-and-Glass Rocks, Port Jackson, 8 fath.

49. *Schizoporella triangula*, Hincks.

(Pl. VI. fig. 3.)

Schizoporella triangula, Hincks, Ann. & Mag. Nat. Hist. ser. 5, vol. viii. p. 60, pl. ii. figs. 4, 4a; Busk, Rep. Chall. Polyzoa, p. 167.

A specimen from Port Jackson is small and only composed of young cells, which are merely punctured without being nodulated; but this is also the case in the young cells of a fine specimen from Port Western, in which the older cells show the usual structure of the species. In old cells the

avicularian chamber is often much raised, looking like an ovicell.

Loc. Bass's Straits, 38 fath.; Heard Island? (*B.*), 75 fath.; Port Western, Melbourne (*W.*); Sow-and-Pigs Reef, Port Jackson, 3-4 fath.; Semaphore, Adelaide (*W.*).

50. *Schizoporella tuberosa* (Rss.).
(Pl. VI. figs. 9 & 10.)

Eschara tuberosa, Rss. Denkschr. Ak. Wien, vol. xxv. p. 188, pl. vi. figs. 9, 10, pl. viii. fig. 1.

Schizoporella biturrita, Hincks, Ann. & Mag. Nat. Hist. ser. 5, vol. xiv. p. 280, pl. ix. fig. 8; see also *ibid.* vol. xvii. p. 269.

Gephyrophora polymorpha, Busk, 'Challenger' Rep. p. 167, pl. xxxiv. fig. 2.

Schizoporella tuberosa, Waters, Quart. Journ. Geol. Soc. vol. xliii. p. 67, pl. viii. fig. 29.

This is interesting for the great variability to which the avicularia are subject; in what we may call the most normal form there is a tower on each side of the oral aperture, and the avicularium is placed on the side directed away from the aperture; but sometimes, on the same colony, the towers bear no avicularia, but have a small round opening on the summit. In some cases the avicularian chamber is not so much raised, and then the mandibular opening is directed towards the distal end of the colony. I do not possess any specimens with the avicularia arching over the mouth, but in the Zürich Museum there is a fine one from Cape Agulhas (S. Africa) showing the arching just as figured by Mr. Busk. Possibly *Reptescharella cornuta*, Gabb & Horn, is this species, though it may be *S. biaperta*.

The attachment is by irregular elongated or tubular projections. A variety described as var. *angustata* occurs fossil in New Zealand.

Loc. Port Phillip Heads (bilaminate); Semaphore, Adelaide (Hemescharan); Cape Agulhas &c., S. Africa; Bondi Bay, N. S. Wales; Botany Bay (Lepralian), and Inner North Head, Port Jackson, 8 fath. (Hemescharan).

51. *Schizoporella Ridleyi*, MacG.

For synonyms, see Waters, Quart. Journ. Geol. Soc. vol. xliii. p. 64.

Loc. Elizabeth Island, 6 fath. (*R.*); Victoria (*MacG.*); Sow-and-Pigs Reef, 3-4 fath., Port Jackson. Fossil: Waipukurau and Napier (?), New Zealand.

52. *Schizoporella confinita*, Waters, var. *ratorniensis*.

There are only small pieces of narrow compressed branches

dichotomizing at a very acute angle. The oral aperture is round, with the sinus a trifle more distinct than in the other two varieties, and this has led me to change the generic position. The surface is studded with large nodules considerably raised and there are small round avicularia, usually one to each zoecium. One fragment certainly seems to have been articulated, as at the base there are numerous large holes resembling those at the base of an internode of *Cellaria*.

Loc. Off Raton, New Guinea, 7 fath.; Cape Grenville, N.E. Australia, 20 fath. (both dredged by *Brazier*).

53. *Schizoporella confinita*, Waters, var. *piperiensis*,
var. nov.

Type *Lepralia confinita*, Waters, Quart. Journ. Geol. Soc. vol. xli. p. 299, pl. vii. fig. 10.

There is a flat bilaminar fragment from Piper Island, with the aperture about 0.12 millim. The surface is covered with numerous dome-shaped elevations with a round avicularian mandible at one side.

With a species like the present it is difficult to know from the aperture whether the lateral denticles form a sinus, or whether the operculum is entire. From the recent specimen I now think that it should be placed under *Schizoporella*.

Loc. Piper Island, N.E. Australia, 9 fath.

54. *Schizoporella divisopora*, sp. nov.
(Pl. V. fig. 4; Pl. VI. fig. 4.)

Zoarium incrusting. Zoecia distinct, ovate, raised, vitreous in young cells, the surface occupied with large stelliform pores, which are separated into four or more divisions by cross bars. Oral aperture emarginate, the sinus being large, rounded. Ovicell raised, surrounded by a thick rim, inside which are a row of pores, the centre of the ovicell raised into a prominent umbo.

The pores in *M. Malusii* are smaller and usually dentate, as the teeth do not meet in the centre. Stellate pores occur in several cases in *Microporella*, but I am not aware of any case in which they have previously been found in *Schizoporella*.

This may be allied to *Schizoporella Maplestonei*, MacG. (Zool. Vict. dec. iv. p. 24, pl. xxxv. fig. 7), and to *Lepralia grossipora*, Rss. (in plate *crassipora*), Bry. Œst.-Ung. p. 177 pl. vii. fig. 6.

Loc. Off the Bottle-and-Glass Rocks, Port Jackson, 8 fath., rocky bottom, and Sow-and-Pigs Reef, 3-4 fath., Port Jackson, N. S. Wales.

55. *Lepralia elimata*, sp. nov.
(Pl. V. fig. 3 ; Pl. VI. fig. 22.)

Zoarium incrusting. Zoecia indistinct, or divided by a deep depression, surface smooth, porcellaneous, frequently a large raised avicularium below the aperture directed forwards, closed by a large round mandible. The oral aperture is coarctate, with a denticle on each side forming the contraction. Opercula 0.13 millim. wide. The ovicell is smooth, plain, subimmersed, widely open in front. This in many respects much resembles *L. hippopus*, but has only the central suboral avicularium and no lateral ones.

The well-marked thickened lateral bands on the sides of the opercula seem to be the rule in true *Lepralia*, and it may be found to be a character of generic value. It occurs in *L. adpressa*, *L. Pallasiana*, *L. Poissonii*, *L. rectilineata*, *L. striatula*, &c., and may be seen in my figure of the operculum of *L. rectilineata* (Quart. Journ. Geol. Soc. vol. xliii. pl. viii. fig. 34).

Loc. Sow-and-Pigs Reef, Port Jackson, 3-4 fath.

56. *Lepralia vestita*, Hincks. (Pl. VI. fig. 21.)

Lepralia vestita, Hincks, Ann. & Mag. Nat. Hist. ser. 5, vol. xv. p. 256, pl. ix. fig. 9.

Specimens from Port Jackson have somewhat larger zoecia than those from Tahiti, the oral aperture is also a trifle larger, and there are no avicularia. The upper part of the thick peristome is raised; the large prominent ovicell is usually thickened at the two sides, where it joins the peristome, forming a kind of raised ridge, and the centre is sometimes umbonated. The operculum has two thick lateral bands, and in the oral aperture there is a denticular contraction at each side.

Loc. Tahiti; Fiji Island; Sow-and-Pigs Reef, Port Jackson, 3-4 fath. (dredged by *Brazier*).

57. *Mucronella Ellerii*, MacG., var. *biaviculata*, nov.
(Pl. V. fig. 9.)

Type *Lepralia Ellerii*, MacG. Trans. Roy. Soc. Vict. vol. ix. 1868, p. 135; Zool. Victoria, dec. iv. p. 31, pl. xxxvii. fig. 8.

A specimen from Green Point, growing on *Idmonea Milneana*, has the rostrum much prolonged with a triangular avicularium on one side, and often on the prolongation of the rostrum a small semicircular avicularium. There are six spines above the aperture, the finely granulated ovicell is

narrower than in typical *M. Ellerii*, and there are no spinous processes. Oral aperture 0·25 millim.

In the shape of the avicularian mandible this most nearly approaches *M. vultur*, Hincks (see Zool. Vict. dec. xii. p. 65, pl. cxvi. figs. 5-8), but this I should only consider a variety. *M. porosa*, Hincks, also seems only to be another variety, and occurs from Port Western, Victoria, with the small rounded avicularium on the margin at one side of the mucro, entirely corresponding with Mr. Hincks's figure.

I have also described (Quart. Journ. Geol. Soc. vol. xxxviii. p. 512) a fossil from Curdies Creek, in which there are spinous processes, as in *M. Ellerii*, with an avicularian chamber at the top, and such spinous processes seem to be readily transformed into avicularia.

We thus seem to have four varieties:—

Mucronella Ellerii, MacG., *typica*, from Williamstown and Warrnamboul, Victoria (*MacG.*); Port Phillip, Vict. (*A. W. W.*); Tasmania (*A. W. W.*).

Var. *porosa*, H., Curtis Island (*H.*); Port Western (*A. W. W.*). (Pl. VI. figs. 12, 17.)

Var. *vultur*, H., Port Phillip Heads, Portland, and Warrnamboul.

Var. *biaviculata*, Waters, Green Point, Port Jackson, 8 fath.

58. *Smittia Landsborovii*, Johnst., form *personata*, H.
(Pl. VI. fig. 23.)

Smittia Landsborovii, Johnst. form *personata*, Hincks, Ann. & Mag. Nat. Hist. ser. 5, vol. xiv. p. 283, pl. ix. fig. 3.

Smittia Landsborovii, Johnst., var. *purpurea*, Hincks, *ibid.* vol. viii. p. 64.

Smittia Jacobsensis, Busk, Rep. 'Challenger,' Polyzoa, p. 153, pl. xix. fig. 7.

Some large specimens growing over *Mesenteripora repens*, Haswell, are deep purple, and in some parts of the colony the arching over of the peristome is frequent, but in others is not seen. Sometimes enormous spathulate avicularia cover the whole of the zoecium. The immersed ovicell has an oval perforated area.

Loc. Living: Bass's Straits (*H.*); Port Phillip Heads (*H.*); Porto Praya, Cape Verd Islands, 100-200 fath.; Marion Island 50-75 fath. (*B.*); N. of Watson's Bay, Port Jackson, under stones.

59. *Rhynchopora crenulata*, sp. nov.
(Pl. V. figs. 7, 8.)

Zoarium incrusting. Zoecia ovate, depressed below, sur-

face smooth, with a spinous umbo below the aperture bearing an avicularium (apparently semicircular) on the inner face; four spines above the oral aperture. In the central zoecia also an erect avicularium with slit-like aperture. Oral aperture (0.1 millim. wide) nearly round, contracted by two lateral denticles near the lower part. Ovicell immersed, with the front flat.

The oral aperture in a case like this might be considered either Schizoporellidan or Lepralian. The outer zoecia are decumbent and the inner erect, resembling *Rhynchopora bispinosa* in this respect; and in these two species the distal edge of the oral aperture is crenulated, which is not usual in the Bryozoa; but I have also seen the same thing in the growing cells of a *Smittia*.

This differs from *R. longirostris* in the surface avicularia being shorter and erect instead of decumbent; there are no perforations round the border of the zoecia, and the aperture with its denticles is different.

Loc. Living: Ball's Head, Port Jackson, 12 fath.

60. *Rhynchopora profunda*, MacG.
(Pl. VI. fig. 11, 16.)

Rhynchopora profunda, MacGillivray, "Descriptions," &c. pt. iii., Trans. Roy. Soc. Victoria, vol. xix. p. 192, pl. ii. fig. 8.

In the specimens from Noumea there is a broad plate or denticle directed inwards from the proximal edge of the aperture, and the "unciform process" is very large and distinct. These are the main characters on which it is separated from *R. bispinosa*; but, besides, the operculum enables it to be distinguished, as the lower sinistral curve is much broader and the muscular impressions are at the side, whereas in *R. bispinosa* the muscles are attached to two bosses on the surface of the operculum, as in *S. Cecilii* &c. The upper border of the operculum when seen from above appears to be nodulated; but when seen laterally these nodulations are found to be small teeth corresponding with the dentate border of the aperture. This last structure also obtains in what I consider *R. bispinosa* from Australia, but there the operculum is granulated and has the muscular impressions in the usual position.

This nodulated or dentate structure is found in many semicircular avicularian mandibles, and is known in two or three opercula, but is not common.

Loc. Port Phillip Heads; Noumea, New Caledonia, 5 fath.

61. *Retepora phænicea*, Busk. (Pl. VI. figs. 15, 20.)

Retepora phænicea, Busk, Brit. Mus. Cat. p. 94, pl. cxxi. figs. 1, 2; Hincks, Ann. & Mag. Nat. Hist. ser. 5, vol. i. p. 362; MacGillivray, Zool. Vict. dec. x. p. 27, pl. 98. figs. 1-5, and pl. 94. fig. 13; Busk, 'Challenger' Rep. p. 124, fig. 34.

The front of the zoecium has numerous large foramina, the dorsal surface is divided by prominent vibicæ, and in each division there are from one to four small foramina.

There seems to be some mistake with Busk's figure of the operculum, as it does not correspond with any that I have seen. The mandible is without a lucida.

This is evidently common, and Mr. Brazier speaks of its being known by his children as the "red coral."

Loc. Living: Bass's Straits, 38 fath.; Victoria; South Australia; off Bottle-and-Glass Rocks, Port Jackson, 8 fath., rocky bottom; and Vacluse Point, Port Jackson, 5 fath.

62. *Retepora formosa*, MacG.

Retepora formosa, MacGillivray, New or Little-known Polyzoa, pt. v. Trans. Roy. Soc. Vict. vol. xx. p. 109, pl. ii. fig. 6, and pl. iii. fig. 6; Zool. Vict. dec. x. p. 24, pl. xvii. figs. 4-6, and pl. xciv. fig. 6.

A small fragment, from which I have been unable to make any preparation, from Bondi Bay, near Sydney.

Loc. Port Phillip Heads, 10-18 fath.

63. *Cellepora albirostris*, Smitt.

Loc. Fossil: River Murray (Austr.); Napier and Wanganui (N. Zealand). Living: Florida; Sydney; Heard Island; Victoria; Shark Island, Port Jackson, 8 fath.

64. *Cellepora mamillata*, Busk.

Cellepora mamillata, Busk, Brit. Mus. Cat. p. 87, pl. cxx. figs. 3-5; Ridley, Proc. Zool. Soc. 1881, p. 54; Waters, Quart. Journ. Geol. Soc. vol. xli. p. 304.

Cellepora mamillata, var. *atlantica*, Busk, Chall. Rep. Polyzoa, p. 199, pl. xxxv. figs. 4, 5, 13.

A specimen from Ball's Head is submassive, some inches across, formed of several layers. The avicularia are often raised as erect tubular chimneys, and the avicularian bar has a minute ligula and the mandible a columella. The smooth round ovicell is scarcely at all raised.

Loc. Fossil: River Murray Cliffs. Living: Patagonia; Brazil; Bahia; New Zealand (*Hutton*); Victoria (*MacG.*); Ball's Head, Port Jackson, 12 fath.; and north side of Watson's Bay, Port Jackson, "found under stones at low water."

65. *Cellepora bispinata*, Busk.

Cellepora bispinata, Busk, Brit. Mus. Cat. p. 87, pl. cxx. figs. 1, 2.

A specimen from the mouth of the Lane-Cove River, Port Jackson, growing on *Amathia*, seems to be this species. It has the spines articulated, as figured by Busk, and the operculum is light-coloured. The ovicell, which was not described by Busk, is globular, granular, arching over the oral aperture, and widely open in front, being very similar to that of *C. ovoidea*, Aud. The mandibles of the small rostral avicularia are semicircular, and in one specimen there are also a few spatulate vicarious avicularia, but I cannot find any in the other specimens.

This in many respects is very closely allied to *C. albirostris*, Sm., but is distinguished by the articulated spines, and the operculum is not distinctly indented at the side, although the chitinous band shows a tendency in this direction, and in this respect resembles that of *C. mamillata*.

Loc. Tasmania (*B.*); Victoria (*MacG.*); New Zealand (*Hutton*); mouth of Lane-Cove River, 7 fath., rocky bottom.

66. *Cellepora granum*, Hincks.

Cellepora granum, Hincks, Ann. & Mag. Nat. Hist. ser. 5, vol. viii. p. 68, pl. iii. fig. 8; Waters, Quart. Journ. Geol. Soc. vol. xxxix. p. 440, pl. xii. fig. 18.

Cellepora Boryi, Waters, Ann. & Mag. Nat. Hist. ser. 5, vol. iii. p. 195.
Lagenipora nitens, MacG., "Descriptions," pt. xii., Trans. Roy. Soc. Vict. 1886, p. 2 (sep.), pl. i. fig. 1.

There is a small specimen from Green Point, growing on *Mucronella Ellerii*, forming a small radiate colony, with thin semitransparent walls, so that the avicularian chamber can be traced as figured by MacGillivray in *L. nitens*, but where the growth is more solid this cannot be done. The bulging ovicells at the side have the characteristic flat surface with radiating pores.

I do not doubt that this is specifically identical with a specimen in my collection from Naples, which I consider to be *C. Boryi*, and also with a specimen sent me as *C. granum* from New Zealand, and another sent as *L. nitens* from Port Phillip.

I have, however, taken Mr. Hincks's name, seeing that *C. Boryi*, Aud., *C. Costazii*, Aud., and *C. Protainii*, Aud., may be varieties of the same thing, with which, at any rate, *C. granum* must be closely allied. It is further closely allied to *Lagenipora spinulosa*, H. (probably *C. bicornis* of the 'Challenger' Report), and *Phylactella lucida*, H.

Loc. Fossil: Victoria. Living: Curtis Island (*H.*); Naples; Port Phillip Heads (*MacG.*); New Zealand; and Green Point, Port Jackson, 8 fath. (sent by *Brazier*).

67. *Cellepore ovoidea* (Aud.). (Pl. VI. figs. 14, 19.)

Cellepore ovoidea, Aud. Descr. de l'Egypte, pl. viii. fig. 7.

Zoarium irregularly lobed, forming a mass about 2 centim. across; has started on a small stalk of seaweed. Zoecia with a few pores, a prominent rostrum without avicularia below the mouth. Operculum slightly convex on the lower edge, and somewhat broader below, but not usually so much as in the figure. Between the zoecia there are large, spatulate, vicarious avicularia, and there is a moderate-sized lucida about the middle of the mandible; there is no columella, and the lower edge is straight.

The ovicell is globular and smooth, usually surmounted by a mucro which sometimes is considerably raised. The ovicell is widely open in front, and projects over the aperture of the raised zoecia.

There is also *C. ovoidea*, Lamx., but the figure and description are not sufficient to enable it to be recognized.

Loc. Vaucluse Point, Port Jackson, 5 fath.

68. *Conescharellina incisa* (Hincks). (Pl. VI. fig. 26.)

Lunulites incisa, Hincks, Ann. & Mag. Nat. Hist. ser. 5, vol. viii. p. 68, pl. iv. figs. 1-3.

Conescharellina conica, Haswell, Proc. Linn. Soc. N. S. Wales, vol. v. pt. i., 1880, p. 42, pl. iii. figs. 7, 8.

Hincks and Haswell both described this about the same time, and it is not clear which had priority; but as there is *Batopora conica*, Seguenza, and *Lunulites conica*, Defr., it would seem necessary to drop that name.

An important avicularian character has been overlooked by both Haswell and Hincks, namely, that on the cross bar, besides the central ligula, there is a smaller one on each side. The zoecial chamber is long, and there is a straight row of about eight rosette-plates along the edge of the wall.

This may be *Lunulites angulopora*, T. Woods, but apparently the avicularia were mistaken for the zoecial cells, and the zoecia for vibracula.

Loc. Holborn Island; Bass's Straits; Port Stephens, 25 fathoms, "sandy mud bottom"; N.E. coast of Australia, 23 fathoms (these latter sent by Mr. Brazier are smaller than the others).

69. *Conescharellina elegans* (d'Orb.).
(Pl. V. figs. 13-17.)

Flabellopora elegans, d'Orb. Pal. Fr. p. 53, pl. 661, figs. 1-5.

In some of the specimens the flabelliform zoarium is formed of two contiguous layers back to back; others have between the layers a cancellous structure with numerous large openings, between which are small round avicularia. The zoecia are similar to those of *C. cancellata*, also with small round avicularia between them, but the zoecium is larger, and the oral aperture measures 0·1 millim. instead of 0·08 millim., as in *C. cancellata*.

Loc. Ouantang and Hainau (China seas), 20 met. (d'Orb.); Port Stephens, 7-8 fath. (dredged by *Brazier*).

70. *Conescharellina cancellata* (Busk).
(Pl. IV. fig. 24; Pl. VI. figs. 13, 18.)

Lunulites cancellata, Busk, Brit. Mus. Cat. p. 101, pl. cxiii. figs. 4-7; Waters, Q. J. Geol. Soc. vol. xxxvii. p. 344, vol. xxxviii. p. 275.
Lunulites cancellatus, Waters, *ibid.* vol. xxxviii. p. 512, pl. xxii. figs. 10, 11.

On the upper surface there are numerous small round avicularia irregularly placed, and the under cancellated surface is formed of round cells with small round avicularian openings similar to those on the upper surface. All my specimens have these round avicularia, and they are also very distinct in the British-Museum specimen; but Mr. Busk does not seem to have correctly appreciated them, as his *Lunulites* is defined as having vibracula, and his *Conescharellina* as having avicularia.

The peristome has a slit on the proximal edge, and the operculum is oval. The avicularian mandible has the lucida in the centre.

The dorsal surface of *C. incisa* is very similar to that of this species, but I am unable to see that the round openings had any mandibular covers, whereas these are universal in *C. cancellata*.

Although this seems to be abundant from some parts of Australia, it is not mentioned by MacGillivray as occurring off Victoria.

Loc. Philippine Islands (*B.*); Raton, New Guinea, 7 fath.; Darnley Island, Torres Straits, 10-30 fath.; Princess-Charlotte Bay, N.E. Australia, 13 fath.; Port Stephens, from weeds on sandy mud bottom, 5-6 fath. (all dredged by *Brazier*). Fossil: Curdies Creek, Vict.; Mt. Gambier, S. Austr.; Bairnsdale, Gippsland.

71. *Selenaria concinna*, Woods. (Pl. V. fig. 11.)

Selenaria concinna, Tenison Woods, "Australian Selenariadæ," Trans. Phil. Soc. Adelaide, 1880, vol. iii. p. 10, pl. ii. fig. 11.

The vibracular chamber is elongate, with a row of large pores round the border; above it there is a small tubular projection, and in the zoecium above there is a semicircular hollow. The oral aperture is 0·16 millim. wide.

The central zoecia are partly closed, in a similar way to those of *Lunulites petaloides*, d'Orb., as described from Muddy Creek (Q. J. Geol. Soc. vol. xxxix. p. 442, pl. xii. fig. 11).

This has only been known fossil previously.

Loc. Fossil: Muddy Creek (Victoria). Living: off Port Stephens, 25 fath. (*Brazier*).

72. *Selenaria maculata*, Busk.

Selenaria maculata, Busk, Cat. Mar. Pol. p. 101, pl. cxvii.; Waters, Quart. J. Geol. Soc. vol. xxxix. p. 440, pl. xii. figs. 7, 9, 12; id. ib. vol. xli. p. 309; Haswell, Polyzoa from the Queensland Coast, p. 42.

Loc. Living: Holborn Island; Barnard Island, N.E. Australia, 10 fathoms (dredged by *Brazier*). Fossil: Muddy Creek and Bird Rock (Victoria); River-Murray Cliffs (S. Australia).

73. *Selenaria punctata*, T. Woods.

Selenaria punctata, Tenison Woods, Trans. Phil. Soc. Adelaide, vol. iii. 1880, p. 9, pl. ii. fig. 8; Waters, Q. J. Geol. Soc. vol. xxxix. p. 440.

Selenaria fenestrata, Haswell, "On some Polyzoa from the Queensland Coast," Proc. Linn. Soc. N. S. Wales, vol. v. pt. i. 1880, p. 42.

This differs from *Selenaria maculata* in the presence of two large pores on the wall of each cell, and the vibracular chamber has a cribriform calcareous cover with much smaller pores than those of *S. maculata*. The pores on the front of the zoecium are sometimes denticulated, but this is not so distinct in the recent as in the fossil specimens.

Oral aperture: Princess-Charlotte Bay, 0·09 millim. wide; Port Stephens, 0·14. The fossil has an aperture nearly double this size.

Loc. Living: off Cape Three Points, 71 fath. (*Woods*); Holborn Island (*H.*); Princess Charlotte Bay, 13 fath. (N.E. Australia, *Brazier*); off Port Stephens, N.S.W., 25 fath., sandy mud bottom (*Br.*). Fossil: Muddy Creek.

74. *Cupularia canariensis*, Busk.

Cupularia canariensis, Busk, Q. J. Micr. Soc. vol. vii. p. 66, pl. xxiii. figs. 6-9; Crag Polyzoa, p. 87, pl. xiii. fig. 2; Manzoni, Foss. Ital. cont. 1^{ma}, p. 10, pl. ii. fig. 17; Bri. foss. del Mioc. d'Aust. ed Ungh.

Ann. & Mag. N. Hist. Ser. 5. Vol. xx.

14

- p. 24, pl. xvii. fig. 56; Waters, Q. J. G. S. vol. xli. p. 308; Pergens, "Plioc. Bry. von Rhodos," Ann. k.-k. Hofmus. vol. ii. 1887, p. 31.
Membranipora canariensis, Smitt, Floridan Bry. pt. 2, p. 10, pl. ii. figs. 69-71.
Cupularia guineensis, Busk, Brit. Mus. Cat. p. 98, pl. cxiv.; 'Challenger' Rep. p. 206, pl. xiv. fig. 6.

As I have previously shown in one specimen from Princess Charlotte Bay, the sulcate structure of the under surface is very marked; but upon careful examination faint cross divisions can also be distinguished, thus separating the dorsal surface into zoecial divisions. A few of the central zoecia are closed by a calcareous lamina, perforated round the border, as figured by Manzoni in *C. Haidingeri*, Rss. (Bri. foss. del Mioc. d'Aust. &c. pl. xvi. fig. 54).

Pergens agrees that I am probably right in uniting both *guineensis* and *stellata* with *canariensis*, and thinks that it is perhaps identical with *C. Haidingeri*.

Loc. Living: Canaries; Madeira; Florida, 10-44 fath.; New Guinea; Torres Straits; Philippine Islands; Princess Charlotte Bay, N.E. Australia, 13 fath. Fossil: Miocene and Pliocene of Europe, numerous localities; Aldinga, S. Australia.

EXPLANATION OF THE PLATES.

PLATE V.

- Fig.* 1. *Cribrilina clithridiata*, sp. nov., $\times 25$.
Fig. 2. *Cribrilina tubulifera*, Hincks, $\times 50$.
Fig. 3. *Lepralia elimata*, sp. nov., $\times 25$.
Fig. 4. *Schizoporella divisopora*, sp. nov., $\times 25$.
Fig. 5. *Porina inversa*, sp. nov., $\times 25$.
Fig. 6. *Cribrilina tubulifera*, H., $\times 25$.
Fig. 7. Avicularium of *Rhynchopora crenulata*, sp. nov., $\times 85$.
Fig. 8. *Rhynchopora crenulata*, sp. nov., $\times 25$.
Fig. 9. *Mucronella Elleri*, MacG., var. *biaviculata*, nov., $\times 25$.
Fig. 10. *Tubucellaria opuntioides*, Pall., $\times 25$.
Fig. 11. *Selenaria concinna*, T. Woods, $\times 25$.
Fig. 12. *Membranipora tripunctata*, Waters, $\times 25$.
Fig. 13. *Conescharellina elegans* (d'Orb.), $\times 25$.
Figs. 14-17. *Conescharellina elegans* (d'Orb.), natural size. 14. Flat specimen seen laterally. 15. Ditto, sp. seen diagonally. 16. Ditto, upper surface of thick specimen. 17. Ditto, upper surface of thin specimen.
Fig. 18. *Membranipora tripunctata*, Waters, natural size.
Fig. 19. Avicularian mandible of ditto, $\times 250$.
Fig. 20. Mandible of vicarious avicularium of ditto, $\times 85$.

PLATE VI.

- Fig.* 1. Operculum of *Microporella decorata*, var. *lata*, MacG., $\times 85$.
Fig. 2. Operculum of *Cribrilina clithridiata*, sp. nov., $\times 85$.
Fig. 3. Operculum of *Schizoporella triangula*, H., $\times 85$.
Fig. 4. Operculum of *Schizoporella divisopora*, sp. nov., $\times 85$.

- Fig. 5. Operculum of *Porina coronata*, Rss., $\times 85$.
 Fig. 6. Mandible of *Microporella decorata*, var. *lata*, MacG., $\times 250$.
 $a \times 85$.
 Fig. 7. Mandible of *Cribrilina monoceros*, B., $\times 85$.
 Fig. 8. Mandible of *Porina larvalis*, MacG., $\times 85$.
 Fig. 9. Mandible of *Schizoporella tuberosa* (Rss.), $\times 85$.
 Fig. 10. Operculum of ditto, $\times 85$.
 Fig. 11. Operculum of *Rhynchopora profunda*, MacG., $\times 85$.
 Fig. 12. Operculum of *Mucronella Ellerii*, var. *porosa*, H., $\times 85$.
 Fig. 13. Operculum of *Conescharellina cancellata* (B.), $\times 85$.
 Fig. 14. Operculum of *Cellepora ovoidea* (Aud.), $\times 85$.
 Fig. 15. Operculum of *Retepora phænicea*, B., $\times 85$.
 Fig. 16. Mandible of *Rhynchopora profunda*, MacG., $\times 250$. $a \times 85$.
 Fig. 17. Mandible of *Mucronella Ellerii*, var. *porosa*, H., $\times 85$.
 Fig. 18. Mandible of *Conescharellina cancellata* (B.), $\times 250$. $a \times 85$.
 Fig. 19. Mandible of *Cellepora ovoidea* (Aud.), $\times 85$.
 Fig. 20. Mandible of *Retepora phænicea*, $\times 85$.
 Fig. 21. Operculum of *Lepralia vestita*, sp. nov., $\times 85$.
 Fig. 22. Operculum of *Lepralia eliminata*, sp. nov., $\times 85$.
 Fig. 23. Mandible of *Smittia Landsborovii*, var., $\times 250$. $a \times 85$.
 Fig. 24. *Discotubigera* (?) *lineata*, MacG., natural size.
 Fig. 25. *Amathia biseriata*, Krauss, $\times 16$, showing radicle.
 Fig. 26. Avicularium and oral aperture of *Conescharellina incisa* (H.), $\times 25$.
 Fig. 27. *Idmonea radians*, showing plates in the side of the ovicell, $\times 25$.
 Fig. 28. Plate of ditto, $\times 85$.
 Fig. 29. *Idmonea interjuncta*, MacG., $\times 16$.

XXI.—*Polyparium ambulans*, a new *Cœlenterate*.

By Dr. A. KOROTNEFF*.

[Plate XIII.]

AMONG the truly singular forms of animals two different types are to be distinguished:—1. The one type appears to be peculiar and interesting as a transition-form between two different classes of animals, and such a form is *Ctenoplana Kowalevskii*, which I have described; 2. The other type fixes the attention of the observer in quite another respect—it is an aberrant form which from various causes has separated itself from its ancestors and taken up an exclusive position in the animal kingdom. If at the same time the intermediate forms have disappeared it only remains for the naturalist to describe this form—he can hardly reckon upon giving it a certain taxonomic position. Such an exclusive aberrant creature is *Polyparium ambulans*, of which I give the description in the following pages.

* Extracted from an article entitled "Zwei neue Cœlenteraten," in the 'Zeitschrift für wissenschaftliche Zoologie,' Band xlv. pp. 468–486. Prof. Ehlers has put forward a different interpretation of the facts recorded by the author; a translation of his remarks will be given in a future number of this journal.